

July – December 2003 Progress Report:
NOAA International Coral Reef Conservation, Fiscal Year (FY) 2003
Promote the Use of Socio-Economic Assessments in Marine Protected Areas

“Urban” Marine Protected Areas of Mactan and Olango Islands, Cebu, Philippines
NOAA Award No. NAO3NOS4630024 to
Coastal Dynamics Foundation, Inc., Cebu, Philippines
(Funded Project Period: January 1, 2003 – June 30, 2004)

1. PROJECT SUMMARY: The project will serve to expand the experience gained to date in designing, establishing and effectively co-managing “urban” marine protected areas (MPAs) in the Philippines. The project will focus on the coastal communities and reef areas within the City of Lapu Lapu (Cebu, Philippines) where MPAs are established or proposed.

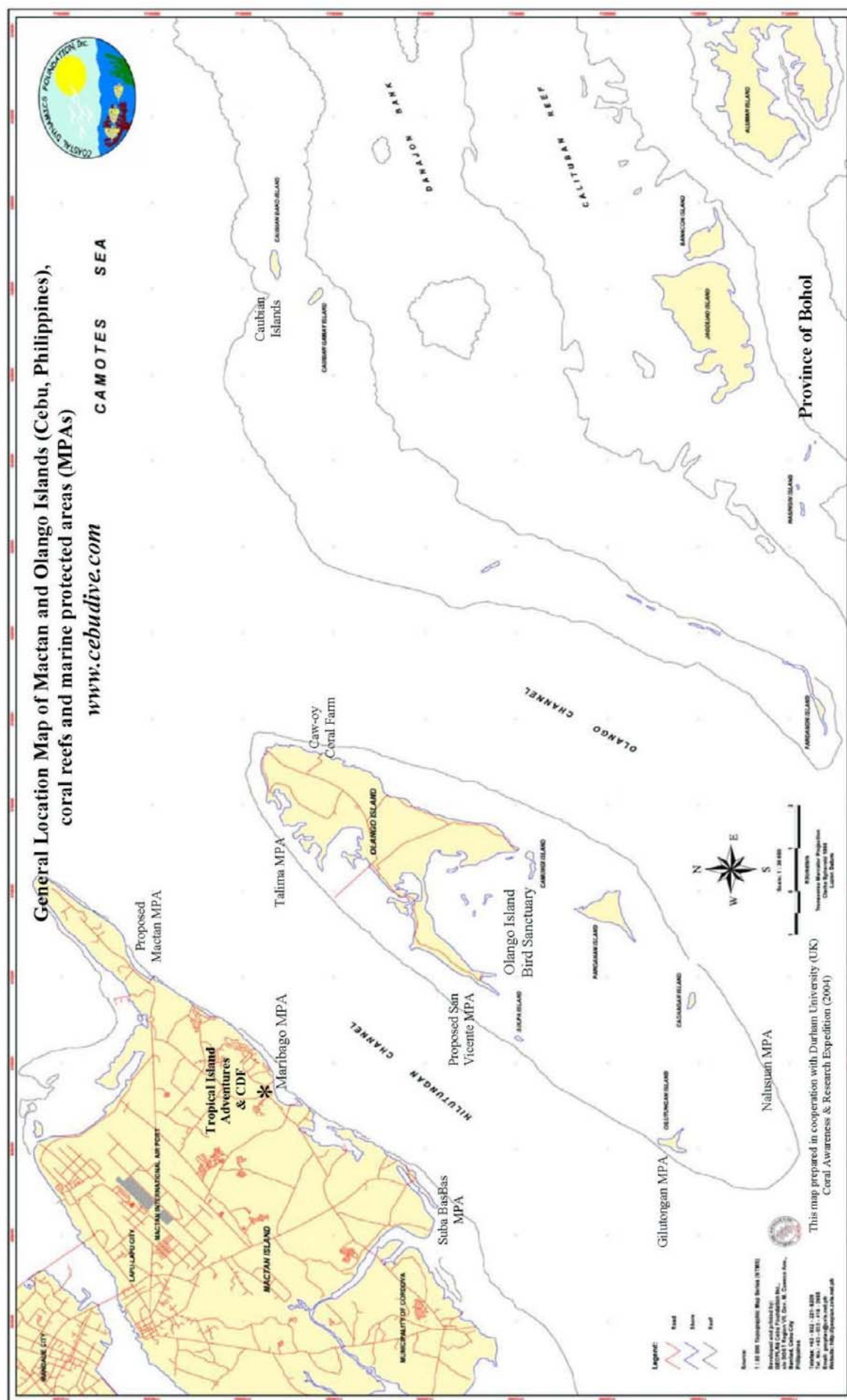
These areas will involve the first MPAs within the project area of Mactan and Olango Islands, located within the City of Lapu Lapu, one of the country’s premiere coastal tourism and diving destinations. This project area may include some of the most accessible, high diversity coral reefs in the world. Due to their accessibility and tourism values, these threatened reef areas offer significant potential for concurrent environmental and socio-economic benefits with improved management.

Complimenting participatory Reef Check surveys of bio-physical conditions, socio-economic assessments will play a key role in the success of this pilot project and planned replication. The project will further test and apply appropriate reef survey, socio-economic assessment and MPA planning approaches to strengthen local reef management and monitoring capabilities and benefits.

The City of Lapu Lapu includes within its’ jurisdiction an estimated 500 hectares (ha) of prime reef habitat, which are characterized by sheer drop-off walls and reef flats. In addition, it includes more extensive areas of reef slopes, seagrass beds and mangroves as well as the 920 ha Olango Island Wildlife Sanctuary (the first and one of the country’s only four RAMSAR sites, which recognizes it as a wetland area of global significance) and key portions of the Danajon Reef, which is described as one of the few “double barrier reef” formations in the world.

2. SUMMARY OF EXPECTED OUTPUTS: The project will serve to support Reef Check and socio-economic assessment and monitoring (SocMon) surveys and trainings for integration of socio-economic assessments (SocMon) into Reef Check methods. An estimated 5,000 local community residents, fisherfolk, coastal tourism and dive industry staff as well as some 50,000 visiting divers and snorkelers per year are expected to benefit from this highly visible project.

The bio-physical quality of the established and enforced MPAs are expected to improve, as measured by increases in live coral cover and abundance and size of “target” fish species. Concurrently, the economic benefits of the established MPAs are expected to be realized by the local communities and key stakeholders following the establishment of MPA user fees.





3. SUMMARY OF PROGRESS DURING REPORTING PERIOD: Based on the original project proposal and actual awarded budget, the following sections summarize progress of the NOAA-funded project during the second 6-month reporting period (August – December 2003). In addition to the current NOAA grant, funding support for project-related activities is being provided to the Coastal Dynamics Foundation (CDF) by the following agencies and organizations:

- ***US National Fish and Wildlife Foundation (NFWF) / NOAA:*** This project will assist communities, government, and private sector groups to establish and manage an MPA within the City of Lapu Lapu. Using this site as a pilot MPA, the project will work with communities to implement sustainable use methods in other important areas as well (Project period: June 2002 – June 2003).
- ***USAID-funded East Asia and Pacific Environmental Initiative (EAPEI) / Reef Check / Institute for the Environment, UCLA:*** This project will help establish and provide initial support for a regional (S.E. Asia) Reef Check training program and center, involving annual regional and Philippine national trainings and conducted surveys (Project period: Sept. 2002 – Nov. 2004).
- ***USAID-funded EAPEI / World Wide Fund (WWF) for Nature, Indonesia:*** This project will support Reef Check surveys in the Philippines, prepare and produce RC training and communication materials in local language (Project period: Sept. 2002 – Nov. 2004).

The progress and specific results of these related projects are separately reported to the corresponding funding organization.

3.1 Survey and Assessment of Proposed MPAs: The primary focus of the project-assisted Reef Check surveys and socio-economic assessments are the proposed and/or established MPA areas within the City of Lapu Lapu, which has formally adopted the project approach as reflected in the following standardized process for establishing MPAs in the City supported by significant increases in approved City government budget allocations for directly related activities for 2004. A current summary status of these surveys and directly related MPA establishment activities is provided on the following page.

Republic of the Philippines
City of Lapu-Lapu
OFFICE OF THE CITY AGRICULTURIST

**MARINE PROTECTED AREA (MPA) ESTABLISHMENT:
STANDARDIZED PROCEDURES ADOPTED FOR LAPU-LAPU CITY**

Steps:

1. Join with barangay officials during their regular/special session and conduct initial briefing about benefits of establishing a marine protected area in their barangay;
2. Conduct socio-economic monitoring survey (SocMon) among the constituents;
3. Conduct underwater resource assessment (Reef Check) of the reef areas fronting the barangay which may be simultaneous with SocMon;
4. Delineation of MPA boundaries / mapping preferably with the use of GPS;
5. Presentation of results of Nos. 2, 3, and 4 above, to the Barangay Council;
6. Conduct public consultation on the proposed establishment of marine protected area (MPA) in the waters fronting the barangay;
 - Presentation of results of Nos. 2, 3, and 4 above to the public;
 - Testimonies of old fisher folks on past conditions of their coastal area;
 - Questions and answers;
 - Show of hands (in favor / not in favor of establishing an MPA);
7. If the public is in favor of establishing an MPA, the barangay has to adopt a resolution requesting the City to promulgate an ordinance establishing an MPA in their area;
8. Promulgation of City Ordinance establishing a marine protected area in the barangay;
9. Implementation and creation of MPA Management Board;
10. Regular MPA monitoring and evaluation (Reef Check, SocMon & other activities)

**Status of Establishing Marine Protected Areas (MPAs)
in the City of Lapu Lapu (Cebu, Philippines) as of Dec. 2003**

	Coastal Barangays within the City of Lapu Lapu with Significant Coral Reef Resources	Barangay Formally Requested Assistance to Establish an MPA	Reef Check Surveys Conducted	Socio-Economic / MPA Perception ("SocMon") Surveys Conducted	MPA Public Consultations Conducted	MPA Formally Established by City Ordinance	MPA Boundary Marker / Mooring Buoys Established	MPA Management Measures Established
1	Agus		√					
2	Baring	√						
3	Caubian	√						
4	Caw-oy	√						
5	Kawhagan	√						
6	Mactan	√	√	√	√			
7	Maribago	√	√	√	√	√ (2000)	mooring buoys	
8	Marigondon		√	√				
9	Pangang-an	√						
10	Punta Engano							
11	Sabang	√						
12	Santa Rosa							
13	San Vicente	√	√	√	√			
14	Suba Bas-Bas	√	√	√	√	√ (2003)	√	√
15	Talima	√	√	√	√	√ (2003)	√	√
16	Tangasan							
17	Tingo	√	√					

Reef Check Surveys: Data compilation, analysis and documentation was completed and distributed, including submission to the global Reef Check database, for twenty (20) Reef Check survey sites completed in 2003, involving a total of 43 trained volunteers, including seven (7) team leaders / scientists. In addition to all targeted MPA areas within the City of Lapu-Lapu, comparative Reef Check surveys were conducted in the nearby Gilutongan Marine Sanctuary, which is within the adjacent Municipality of Cordova.

These surveys were conducted by volunteer teams of trained community members, local divers and interns, supported by qualified marine scientists from Coastal Dynamics Foundation, participating Philippine government agencies and local universities. The average Reef Check team consisted of 6 volunteer divers, a team leader and a lead marine scientist.

Socio-Economic Assessment and Monitoring (SocMon) Surveys: SocMon activities summarized in the proceeding Table were conducted in the local dialect through and in close coordination with staff members of the City of Lapu Lapu's Department of Agriculture / City Agriculturalist Office (DA / CAO; the City agency responsible for fisheries and coastal management) and local community members (particularly local school teachers).

The summary results of these SocMon MPA perception surveys conducted for four (4) key coastal barangays (communities) in the City of Lapu Lapu by local agencies and community members are provided on the following Table. The information and results of these local household surveys, combined with the informal means of communication regarding the survey questions, proved to be very valuable during the proceeding conduct of public hearings establishing these MPAs.

It is our understanding that these are the first such MPA-related socio-economic / perception surveys formally conducted in the City, the results of which are being used to support MPA consultations, planning and legal establishment. The DA / CAO now have adopted the SocMon-related questions tested by CDF in Barangay Talima for their regular use. It was interesting to note that the only community surveyed to date with a majority reported against establishing an MPA was Barangay San Vicente, which borders the national government established and managed Olango Island Wildlife Sanctuary (OIWS), one of only four RAMSAR Convention sites in the Philippines. Apparently, the OIWS was established in 1992 with limited local consultations and most local communities have seen few direct benefits to date.

Concurrently, daily "user and type of use" monitoring of the 15 hectare Talima MPA was maintained by the CDF-supported MPA watchmen, the summary results of which follow.

In a complimentary activity, the CDF completed local coordination and conduct of user (tourist diver) surveys as part of a project entitled "The Economic Value of Coral Reef Biodiversity: Examples from Southeast Asia". This multi-national project is lead in the Philippines by the University of the Philippines, Marine Science Institute (UPMSI) and Marine Environment Research Institute (MERF), with funding support provided by TotalFinaElf Corp. Foundation.

3.2 Training: The project will support several se types of related MPA training, including:

- Reef Check surveys and data analysis – completed baseline surveys and trained teams for all currently targeted MPA sites within the City;
- Socio-economic assessment and resource valuation – completed development and testing with adoption by the City's DA / CAO;
- Scuba diving certification – organized and planned to be conducted during July and August involving key DA / CAO staff members and local MPA leaders and wardens;
- MPA planning and management – supported planning and GPS delineation and mapping of proposed MPAs in the communities (barangays) of Talima, Suba Basbas, Mactan, Agus and Sabang, with requested support to the previously established Maribago MPA.

**Summary of Selected Questions from Socio-Economic Assessment (SocMon) Surveys:
Four (4) Coastal Barangays for Marine Protected Area (MPA) Establishment,
City Agriculturalist Office (CAO), Lapu Lapu City, Cebu, Philippines
Coastal Dynamics Foundation**

Barangay	Talima	Suba Basbas	Mactan	San Vicente
Island	Olango	Mactan	Mactan	Olango
Date of Soc-Mon Surveys	June 2003	June 2003	Oct. 2003	Nov. 2003
No. of Household Survey Respondents	78	60	392	42

Question 1: Are you aware of the current condition of our coastal environment?

	% of Responses	% of Responses	% of Responses	% of Responses
1.1 Yes	72%	69%	82%	95%
1.2 No	28%	31%	18%	5%

Question 2: How can you best describe the conditions of your coastal environment?

2.1 Same as before			1%	1%
2.2 Better than before	2%	34%	14%	49%
2.3 Destroyed / reduced catch	85%	39%	52%	49%
2.4 Don't know	13%	27%	34%	1%

Question 3: What do you think are the causes of the destruction of our reefs?

3.1 Illegal/destructive fishing methods	51%	75%	68%	84%
3.2 Fine meshed fishing nets	14%		27%	4%
3.3 Trash / pollution		25%	6%	6%
3.4 Over-fishing	35%			2%
3.5 Illegal coastal structures		15%		
3.6 Others			6%	11%

Question 4: Are you familiar with the Gilutongan Marine Sanctuary?

4.1 Yes	79%	45%	62%	94%
4.2 No	21%	55%	38%	6%

If yes, do you think Gilutongan Marine Sanctuary was successful in protecting the reef?

4.3 Yes	70%	<i>Question not</i>	84%	83%
4.4 No	13%	<i>Incl. in survey</i>	16%	17%
4.5 Don't know	17%			

Question 5: Are you willing to support establishment of an MPA in your place?

5.1 Yes	65%	94%	96%	36%
5.2 No	35%	6%	4%	64%

Question 6: What is your understanding of the purpose of an MPA?

6.1 Fish breeding area	26%	34%	26%	23%
6.2 Fish reserve / shelter	35%	38%	40%	23%
6.3 No fishing area	21%	30%	22%	27%
6.4 "No entry" area	10%	6%	13%	26%
6.5 Don't know purpose of an MPA	8%			

Barangay	Talima	Suba Basbas	Mactan	San Vicente
Island	Olango	Mactan	Mactan	Olango
Date of Soc-Mon Surveys	June 2003	June 2003	Oct. 2003	Nov. 2003
No. of Household Survey Respondents	78	60	392	42

Question 7: What do you think are the benefits of establishing an MPA?

7.1 Increase fish catch	49%	37%	32%	24%
7.2 Stop illegal fishing practices	11%	35%	30%	24%
7.3 Increase income of community	6%	16%	18%	24%
7.4 Increase tourism	32%	12%	20%	27%

Question 8: What is the best way of preventing destruction of our reefs?

8.1 Alternative livelihood		22%	12%	47%
8.2 Law enforcement / fish wardens	<i>Question not</i>	27%	36%	9%
8.3 Education on marine environment	<i>Incl. in survey</i>	53%	44%	44%
8.4 Others			8%	

Question 9: What are the main problems facing your community?

9.1 Stealing / crime	25%		16%	1%
9.2 Drugs	8%	16%	35%	25%
9.3 Gambling	4%	1%	1%	16%
9.4 Lack of livelihood / work	51%	39%	19%	21%
9.5 Video karaoke			11%	
9.6 Poor sanitation facilities / services	4%	26%	12%	19%
9.7 Over-population	2%		1%	
9.8 Illegal fishing / degraded environment	2%		4%	16%
9.9 Sickness and health problems	6%	9%		
9.10 Others		8%	2%	2%

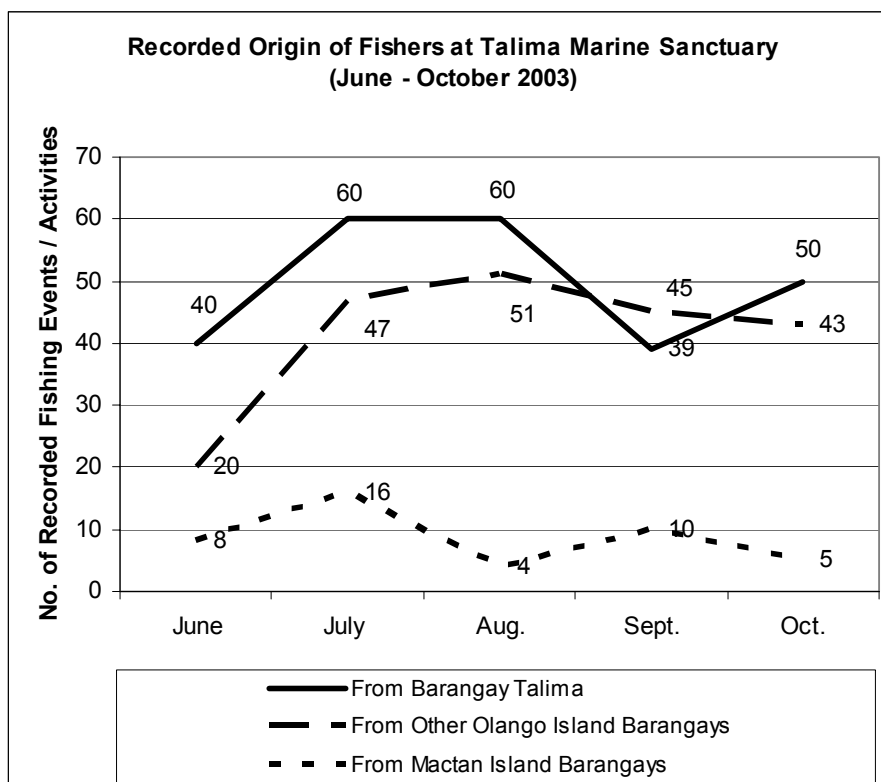
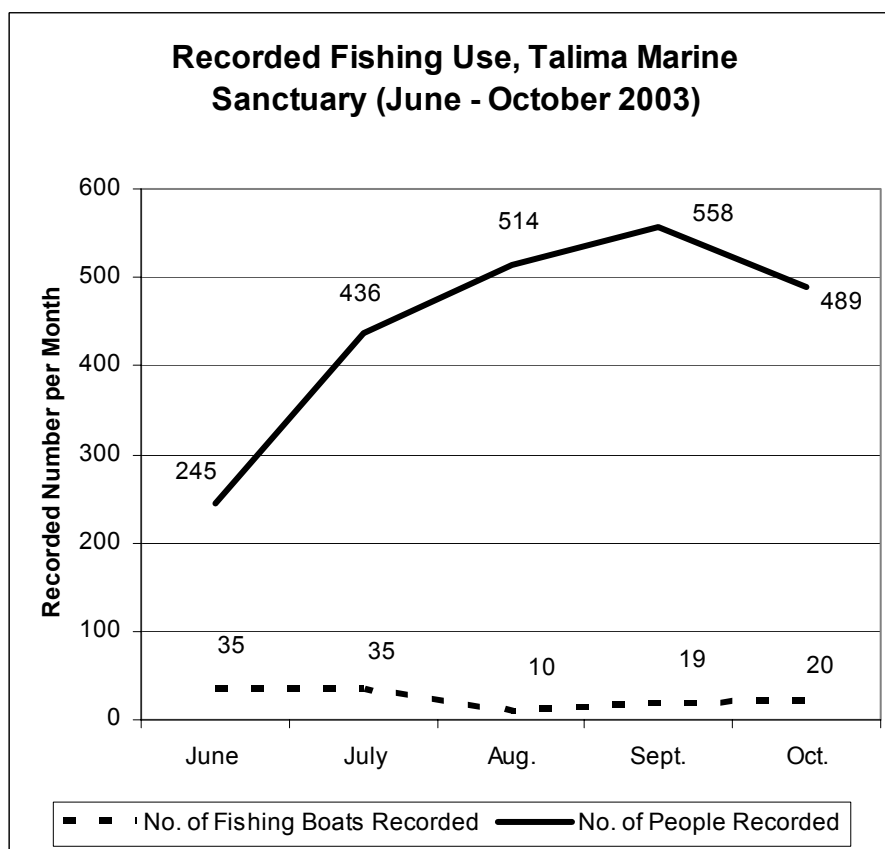
Question 10: What are the possible solutions?

10.1 Community effort / action	<i>Question not</i>		7%	12%
10.2 More education	<i>Incl. in survey</i>		21%	1%
10.3 Drug control / law enforcement		8%	31%	33%
10.4 Parental guidance / upbringing			16%	1%
10.5 Government aid / livelihood		86%	14%	26%
10.6 Sanitation facilities / services			5%	18%
10.7 Population management		6%	1%	
10.8 Others			6%	9%

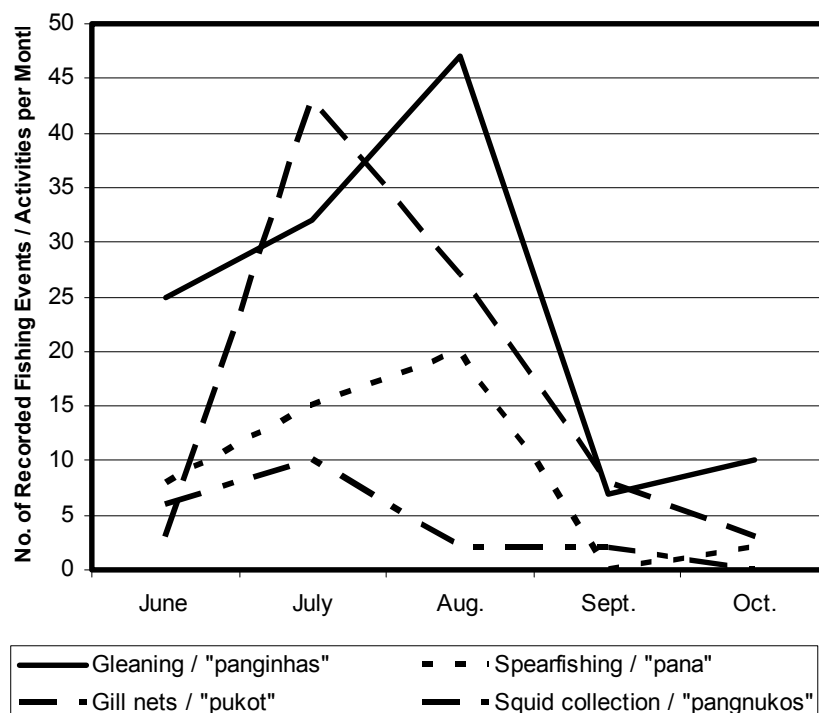
Question 11: Are you involved in coastal management activities?

11.1 Yes	<i>Question not</i>	47%	45%	62%
11.2 No	<i>Incl. in survey</i>	53%	57%	39%

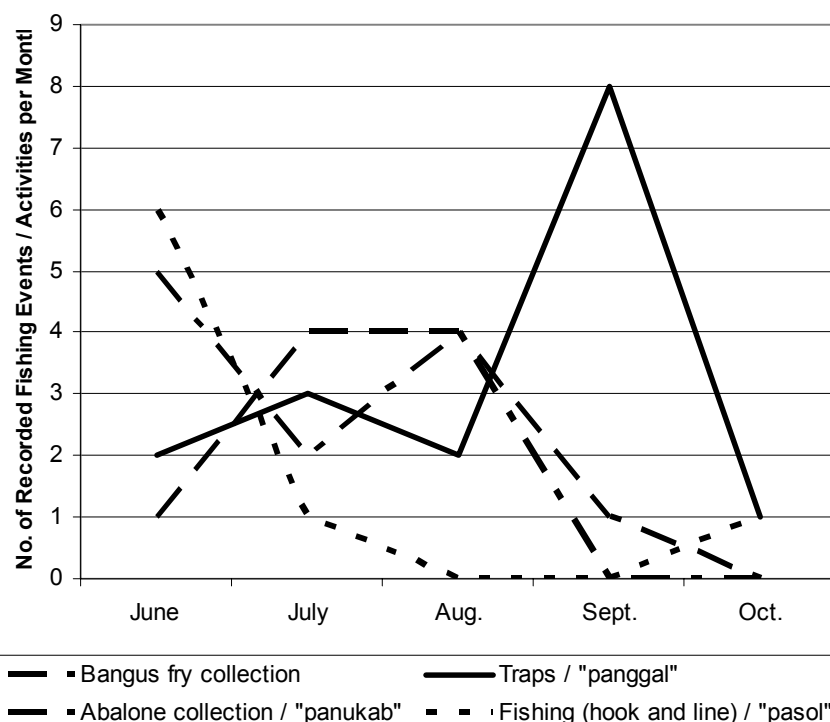
**Summary Graphic Data from Daily On-Site SocMon Monitoring of the Talima MPA,
Olango Island, which was officially established through project support
and City Ordinance in September 2003**

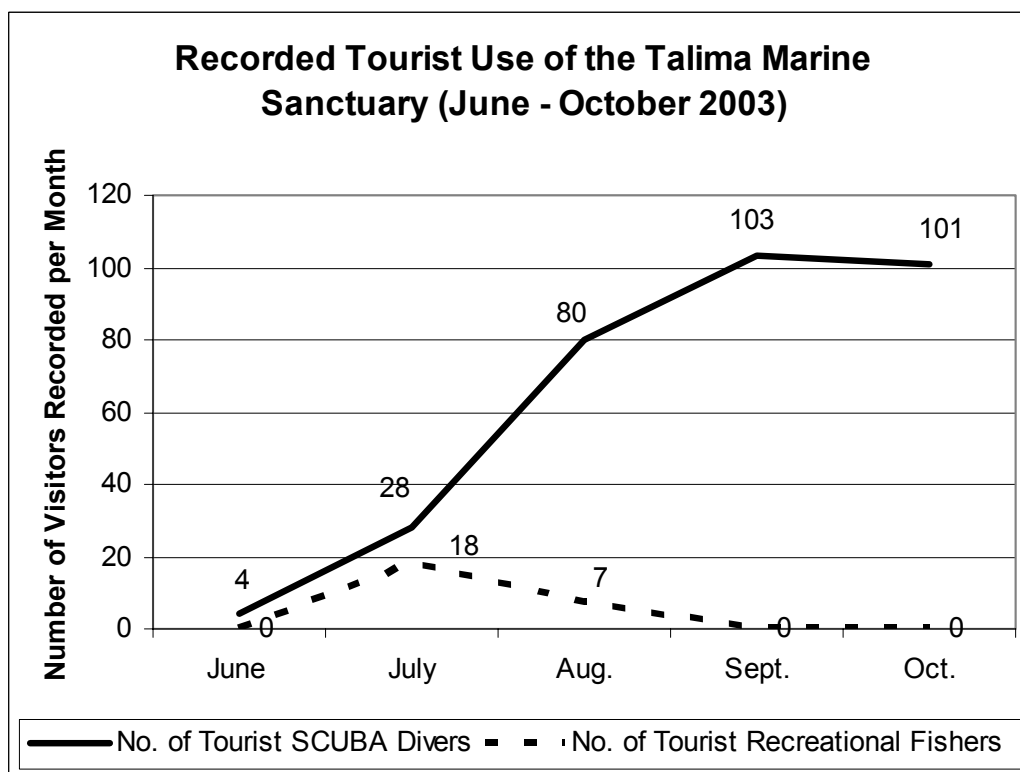
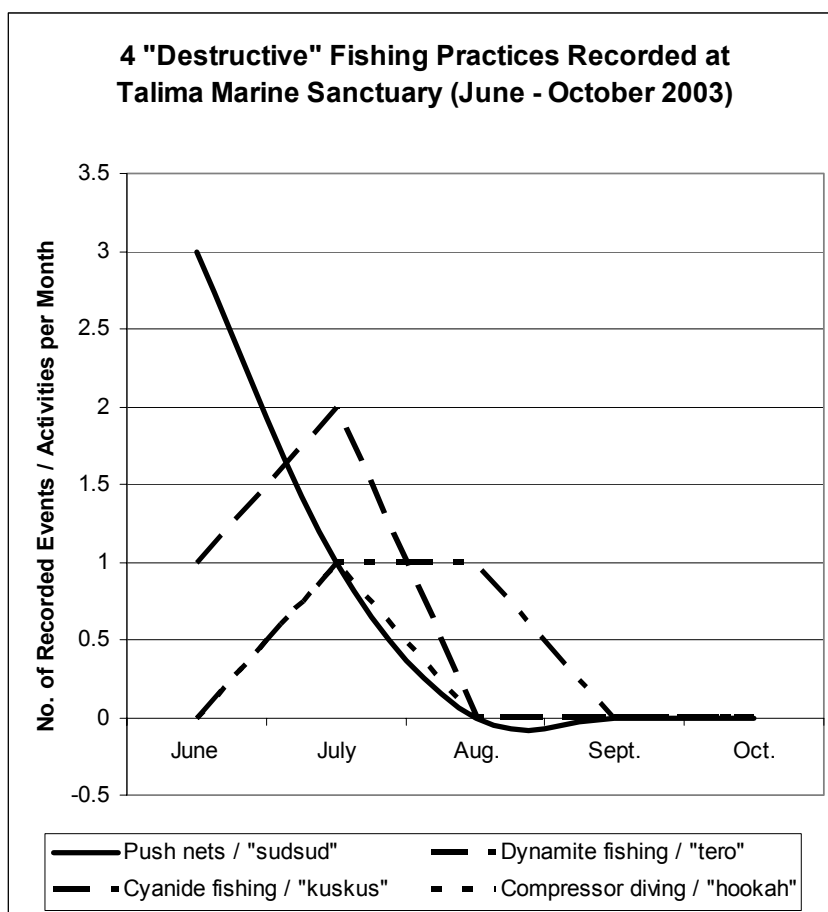


4 Most Common Types of Recorded Fishing Activities in the Talima Marine Sanctuary (June - October 2003)

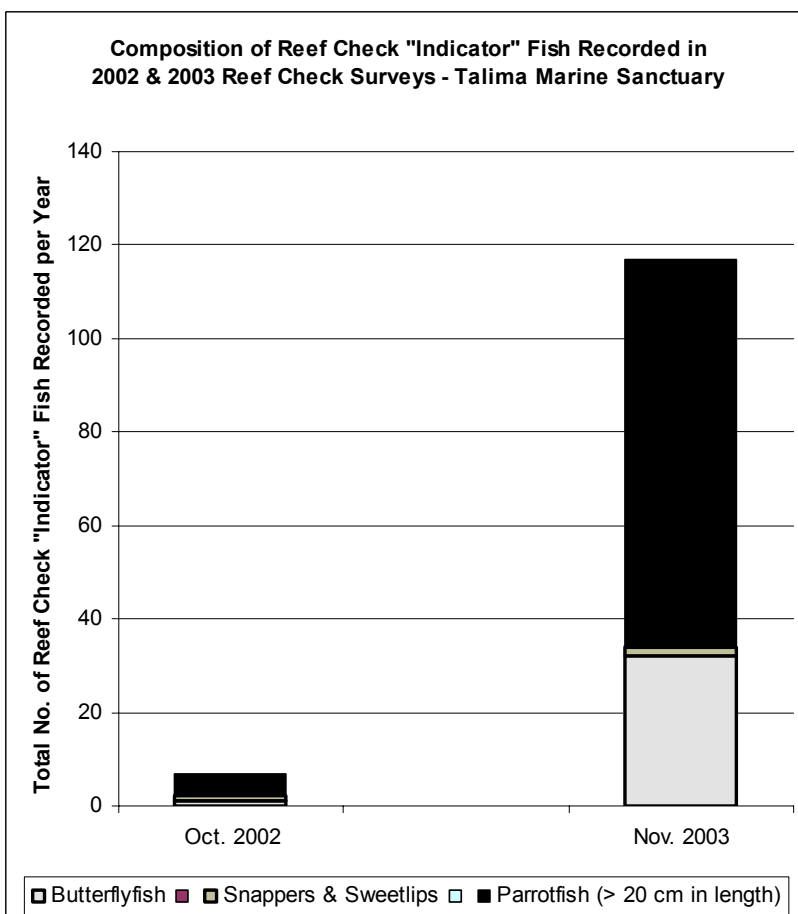
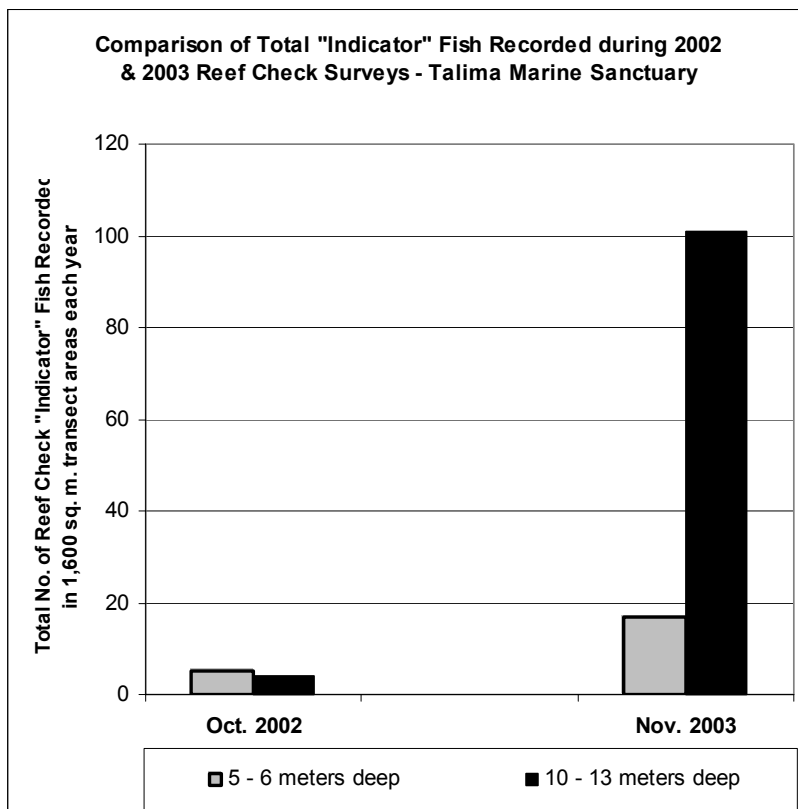


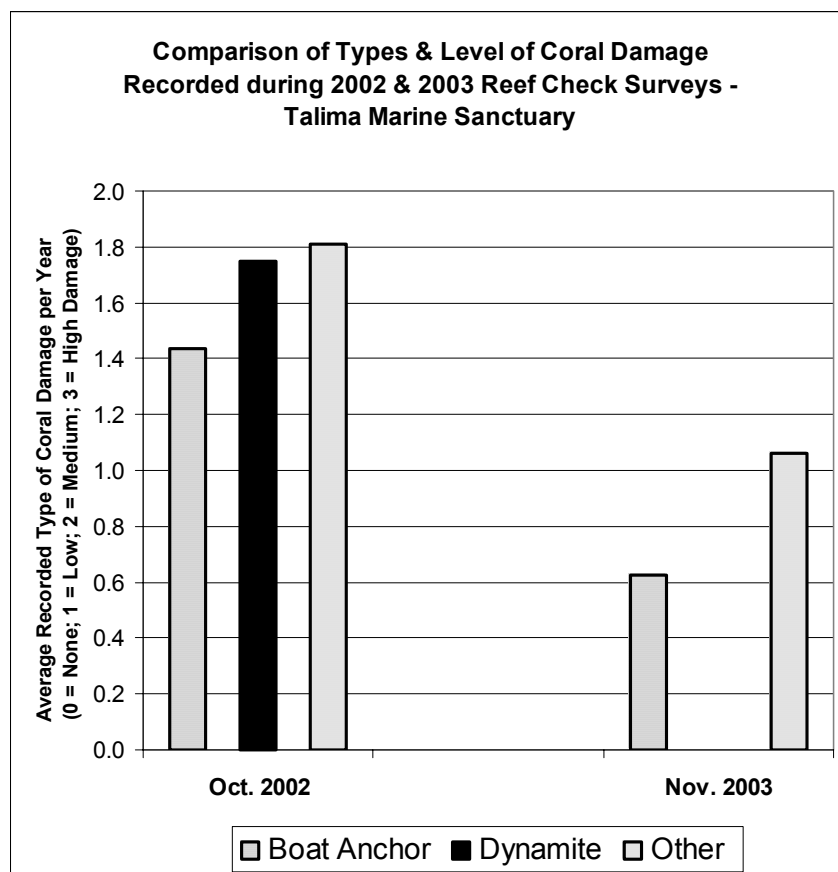
4 More Types of Fishing Activities Recorded at Talima Marine Sanctuary (June - October 2003)





Summary of Key Reef Check Results for the Talima Marine Sanctuary, 2002 and 2003





Key training activities during the reporting period involved the organization and conduct of both local and regional SE Asia Reef Check Trainer's Trainings, involving:

- One (1) week Regional S.E. Asia Reef Check Trainers' Training organized and conducted, involving 14 participants from the four (4) targeted countries, involving six (6) trainers) as well as concerned national and local government agencies and institutions.
- Four (4) day National (Philippines) Reef Check Training conducted for 12 Filipino participants from the Mactan Island / Cebu area, involving six (6) trainers and counterpart support from local resorts and dive operators.

During the training workshops, orientations on SocMon were provided as well as copies of all methods, related documents, studies, and ordinances to participants to support their overall understanding of reef conservation and management approaches.

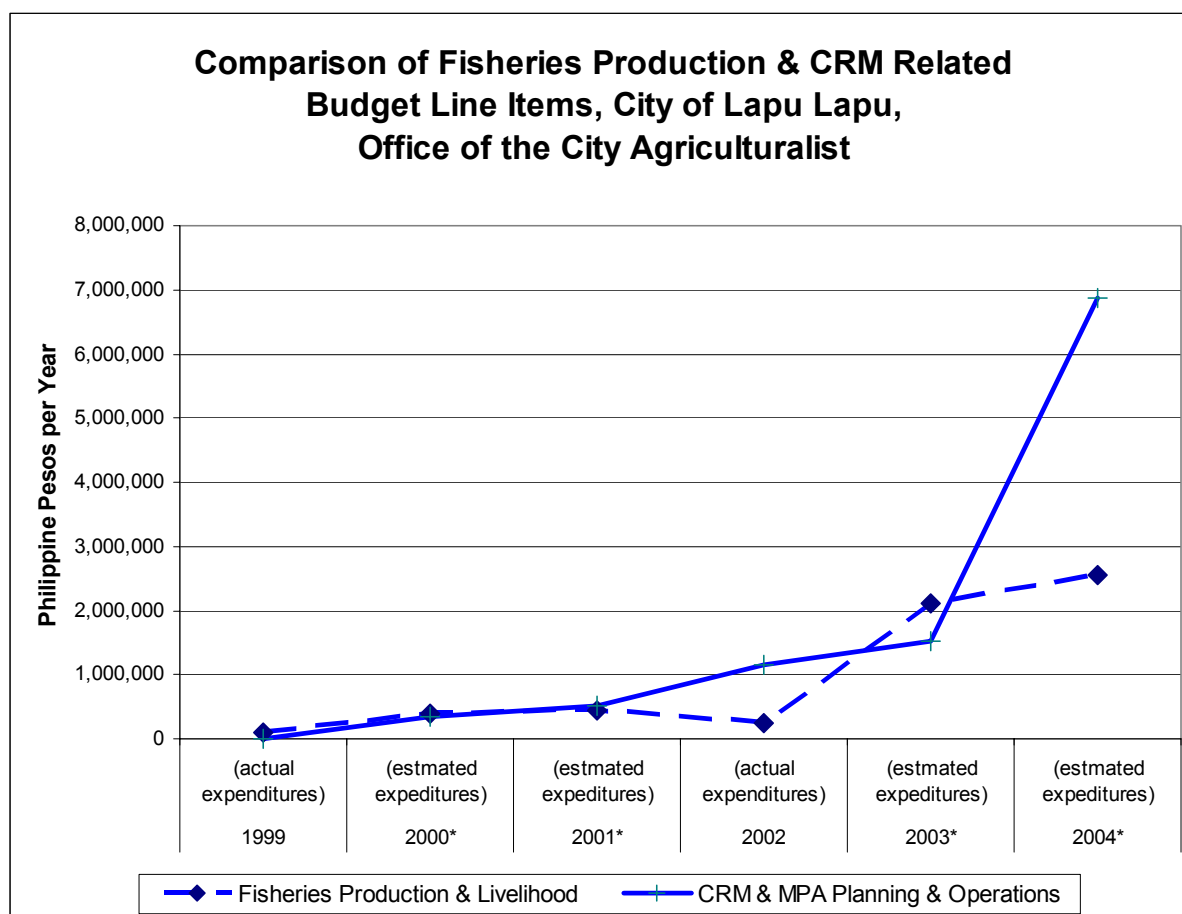
Provided key resources (Reef Check, mapping, public presentations / consultations and mooring / MPA boundary buoy placement) to support the City's initiation of MPAs in 17 coastal barangays of Lapu Lapu City, including formal establishment by City Ordinance of two (2) MPAs during 2003, involving over 25 ha of prime reef areas.

3.3 Capacity Building: The project is designed to help build the local capacity to better assess, manage and monitor their coral reefs and related community socio-economic aspects. Key areas of capacity building that will be supported through the project include participatory MPA planning and design; mapping, boundary delineation and mooring buoy installation; Reef Check and SocMon assessment and monitoring surveys; survey data analysis and application; enhanced participation of the private sector and other key community sectors.

Key areas and activities for capability building during the reporting period included:

- **City of Lapu Lapu** – Responsible city-level local government unit, supported by a Fisheries and Aquatic Resources Management Council (FARMC) and their DA / CAO. As part of the project, full attendance was maintained by CDF staff in weekly City FARMC meetings as well as several organized field trips and surveys to evaluate proposed livelihood activities and alternatives for targeted coastal communities. In general, all community activities were lead or participated in by DA / CAO staff to build their capabilities and recognize their roles and responsibilities.

Over the course of the project to date, a significant result can be measured by approved budget allocations for project-related activities as reflected in the following Figure.



- ***Barangay Councils of Targeted MPA Areas*** – Responsible community-level local government unit. As part of the project, CDF staff provided technical assistance and support for planning and delineating proposed MPA areas and drafting appropriate ordinances. This included CDF assistance and consultations to help establish a Barangay-level FARMC to guide planning and management of the proposed Talima MPA;
- ***Local Dive Operators and Resorts*** – Significant private sector resources that could be organized and mobilized under the project. As part of the project, CDF staff provided needed support and active involvement to the “Ocean Care Advocates, Inc.” – which was formed with CDF support in late 2002 and is the first legally registered, non-government organization (NGO) comprised of concerned resorts and dive operators based on Mactan Island, with a goal to support establishment of MPAs and improve reef conservation.
- ***Bureau of Fisheries and Aquatic Resources*** – A key source of technical and legal MPA assistance. As part of the project, they were directly involved in all trainings, Reef Check surveys and MPA establishment activities, and include a number of CDF volunteers;
- ***University of San Carlos (USC) and University of the Philippines (UP), Cebu*** – Marine sciences, education and community extension. The USC operates a marine station within the project area. As part of the project, they were directly involved in all trainings, Reef Check surveys and MPA establishment activities as the CDF primarily consists of graduates and volunteers from these local universities;
- ***The Cebu Jaycees*** – One of the oldest, civic-oriented business groups in Cebu and the Philippines. As part of the project, CDF supported design and development of their REEF Program and proposed MPA and coastal livelihood support activities in the Barangay Talima area, for which they were honored with a national award for excellence and an international award is under review.
- ***Philippine Coast Guard*** – Increasingly active in coastal law enforcement. As part of the project, CDF staff provided continued liaison and updates, including their active role in the March 2003 “launching” of the Talima MPA;
- ***Philippine Coast Guard Auxiliary*** – Members include most local dive / boat operators. As part of the project, CDF staff continued to support their active involvement and participation in key activities;
- ***International interns and graduate students*** – Completed report documentation and presentations for a second Dutch M.Sc. intern who completed his volunteer services and studies in Sept. 2003.

Assist Planning, Establishment and Management of MPAs: The project’s anticipated output and results of supported training and capability building is a measure-able increase in the local reef areas that legally designated and protected as MPAs, and the concurrent environmental and economic benefits that improved reef management can provide.

Following assisted establishment of the Maribago MPA (Mactan Island) in 2002, project attention was focused on Barangay Talima (Olango Island) during the reporting period due to the observed political will and public support to establish an MPA in their spectacular but

threatened reef area. Assistance was provided in the community planning process leading to passage of a Barangay Resolution in February 2003, requesting the City to endorse the Talima MPA establishment.

With the full support and involvement of the City and key stakeholders, the 15 hectare Talima MPA was publicly “launched” in March, 2003 and formally established by City ordinance in September 2003, followed by the 15 hectare Suba Basbas MPA City Ordinance in October 2003.

Proposed Integration of Socio-Economic Parameters into Reef Check Methods: Over the course of this project, a discrete set of socio-economic parameters and approaches will be identified and recommended to Reef Check as potential additions to their current core and optional data collection protocols.

These activities were fully integrated into conducted Reef Check regional SE Asia trainers’ training which was held by CDF in October 2003 on Mactan Island, Cebu for selected participants from Indonesia, Thailand, Vietnam and Philippines. Primary funding support for this Regional SE Asia Trainers’ Training was provided by an EAPEI-funded subcontract to Reef Check / UCLA.

Project-Related Publications during Reporting Period:

G. HODGSON AND M. ROSS, 2003. *Gilutongan – Reef Check Leads to Community Management*. Invited Case Study in “Role of Monitoring in Effective Management of Coral Reef Marine Protected Areas”, World Parks Congress, Durban, South Africa, September 2003.

MICHAEL and NORA ROSS, M. AMORES, A. AMORES, and D. MONSANTO, 2004. *Putting Some Simple Tools to Work: Innovative Approaches to CRM, MPAs and Reef Conservation in a Complex “Urban” Environment: Lapu Lapu City, Cebu, Philippines*. (Accepted papers to be presented at the Coastal Zone Philippines 2004 Conference in March 2004 and 10th International Coral Reef Symposium in June 2004).